

Public Comment Responsiveness Summary

Total Maximum Daily Loads for Nutrients San Diego Creek and Newport Bay, California

United States Environmental Protection Agency Region 9

April 13, 1998

Introduction

On December 9, 1997, the California Regional Water Quality Control Board, Santa Ana Region (Regional Board) and the U.S. Environmental Protection Agency, Region 9 (EPA) noticed the availability of the proposed nutrient TMDL for San Diego Creek/Newport Bay and requested comments from the public. A number of comments were addressed to the Regional Board and were addressed by Regional Board staff. One comment letter was directed to the EPA and is addressed below.

EPA is establishing these TMDLs pursuant to EPA commitments under a consent decree, Defend the Bay, Inc. v. Marcus, (N.D. Cal. No. C 97-3997 MMC). On February 27, 1998, the EPA noticed the availability of proposed nutrient TMDLs for San Diego Creek/Newport Bay and supporting documentation. The comment period closed on March 31, 1998, and the EPA received six comment letters which are addressed below.

Comment to EPA on December 9, 1997 Regional Board Proposal

Commentor 1: Mark R. Wolfe, Natural Heritage Institute, letter dated January 8, 1998

Comment 1.1 Nitrogen Reduction Targets

The 50% reduction in Total Nitrogen may not be sufficient to restore beneficial uses. Beneficial uses were being impaired at nitrogen levels approximating those of 1973. Based on this data, a greater than 50% reduction of current loadings is necessary to satisfy requirements of 303(d).

Response 1.1 The EPA nutrient TMDL for total nitrogen establishes limits for dry season loading and wet season loading during non-storm events. A comparison of the EPA total nitrogen TMDL for Newport Bay to low-flow nitrate loading described in the Blodgett report (1989) indicates that the EPA limits are lower than historical (i.e. 1973). It should also be noted that the volume of tidal flushing will increase with implementation of long term sediment management in the Bay, which will result in greater dilution of freshwater nutrient inputs than occurred historically. These two factors provide a margin of safety for any uncertainty in the use of 1973 conditions as the target for total nitrogen loading into Newport Bay.

Comment 1.2 Assumptions Regarding Load Reductions from Unknown Sources

The draft TMDL identifies the sources of 2/3 of the current total nitrogen load and the rest as “unidentified sources”. The TMDL anticipates that 60% of the five-year goal will be met by controlling sources yet to be identified.

Response 1.2 The EPA TMDL includes an allocation for “unidentified” sources to account for the potential contribution of ground water dewatering operations as well as ground water accretion to Newport Bay tributary flow and nutrient load. Total nitrogen inputs from ground water dewatering operations can be controlled either through on-site treatment or connection to the sanitary sewer. Total nitrogen contributed by ground water accretion can be reduced by maintaining and enhancing the wetland and riparian functions of San Diego Creek and its tributaries. Other sources listed as “unidentified” by the Regional Board were either not part of the calculation of current loading (i.e. in-Bay nitrogen sources) or are accounted for in the waste load and load allocations (i.e. atmospheric deposition onto agricultural land and urban areas). It should also be noted that the Tetra Tech loading assessment (1998) for San Diego Creek did not include an “unidentified” sources category but tried to account for all sources of nitrogen. It is, therefore, likely that the actual contribution of “unidentified” sources to current nitrogen loading is not as high as one might infer from the Regional Board loading assessment. Additionally, it is anticipated that further investigations to be commissioned by the Regional Board will lead to refinement of both the loading capacity of Newport Bay and the waste load and load allocations (i.e. “unidentified” sources will be identified and allocations will be adjusted based on the feasibility of control options).

Comment 1.3 TN vs. TIN Limitations in WDRs and NPDES permits

We had previously noted the proposed Basin Plan Amendment indicates that WDRs and NPDES permits will be revised for discharges that are in excess of 1 mg/L TIN . We requested that the Regional Board modify permits and WDRs with discharges in excess of 1 mg/L TN rather than TIN, which would be consistent with the nutrient TMDL.

Response 1.3 EPA’s understanding is that the 1 mg/L TIN language in the proposed Basin Plan Amendment would trigger review and possible revision of waste discharge requirements and NPDES permits. The limits in the permits would likely be written in terms of total nitrogen rather than total inorganic nitrogen, since the TMDL waste load and load allocations are written in terms of total nitrogen loading levels.

Comment 1.4 Implementation of Phosphorous Reduction Targets

Section 303(d) and 40 CFR 130.7 require specification of numeric load allocations, waste load allocations and a margin of safety, and that these allocations in turn should be incorporated into new and/or revised WDRs and NPDES permits, as necessary. We also voiced concern earlier that simply linking TP reduction targets in the sediment TMDL may not be an appropriate implementation strategy since, ..., phosphorous attaches to clay and silt, but generally not to sand.

Response 1.4 EPA agrees that numeric waste load and load allocations are a necessary part of the TMDL and has incorporated such allocations in the phosphorous TMDL. EPA disagrees that the margin of safety must be numeric. Clean Water Act Section 303(d) merely states that the margin of safety must account for uncertainty. The margin of safety for the total phosphorous TMDL is described in section 3.5 of the TMDL report.

As described in the TMDL, land use changes and erosion control actions are expected to result in a shift in particle size distribution to a greater percentage of sand (indicating a proportionally greater reduction in silt and clay). Since phosphorous attaches to clay and silt and since there will be a greater reduction in clay and silt particles with implementation of the sediment TMDL, the sediment TMDL and implementation strategy is consistent with control of phosphorous.

Comment 1.5 *Definition of Margin of Safety*

We earlier questioned the inclusion of certain unidentified sources in the TMDL's margin of safety and suggested that such sources be assigned load allocations. ... we note that Table 5-9b now no longer reflects a margin of safety at all. We continue to believe that section 303(d) requires the TMDL to include a margin of safety...

Response 1.5 EPA disagrees that the margin of safety must be numeric. Clean Water Act Section 303(d) merely states that the margin of safety must account for uncertainty. The margin of safety for the total nitrogen TMDL is described in section 3.5 of the TMDL report.

Comments to EPA on February 27, 1998 Proposed Nutrient TMDLs for San Diego Creek and Newport Bay

Commenter 2: Scott Dawson, California Regional Water Quality Control Board, Santa Ana Region, Letter dated March 24, 1998

Comment 2.1 *Definition of Storm-based flow*

The use of a flow based measurement as the definition of a storm event is appropriate. We would like to see the footnote clarified so that the increase in flow is specifically from a storm event. Proposed additional language to be added to footnote 2 of Table 1 for the TMDL for Newport Bay is shown in italics: The load limits also apply on days on which the mean daily flow rate in San Diego Creek at Campus Drive is above 50 cubic feet per second (cfs), as a result of events other than precipitation. This language would also apply to footnote 4 of Table 2 for the TMDL for San Diego Creek, Reach 2.

Response 2.1 The EPA agrees with the Regional Board and has made the clarification.

Comment 2.2 *The Regional Board requests that Option B expressed in total nitrogen as outlined in Table 10(b) be selected as the TMDL for San Diego Creek, Reach 2. This would keep all of the nutrient TMDL's in the same unit of measurement and allow potentially affected discharges to plan to meet the TMDL in an appropriate and similar manner. These changes*

would make USEPA's proposed nutrient TMDL's consistent with the nutrient TMDL's proposed by the Regional Board.

Response 2.2 The EPA agrees with the Regional Board and has made the change to the San Diego Creek, Reach 2 TMDL. The load based total nitrogen TMDL is designed to meet water quality standards and should provide more consistency with the total nitrogen TMDL that applies to the rest of the Newport Bay watershed. Greater consistency between the total nitrogen TMDL for the Newport Bay watershed and the TMDL for San Diego Creek, Reach 2 will simplify implementation and, therefore, make attainment of water quality standards more likely.

Commenter 3: Ken A. Thompson, Director of Water Quality, Irvine Ranch Water District, Letter dated March 31, 1998

Comment 3.1 *The proposed nutrient TMDL does not allow for seasonal variation, even though scientific evaluation of the data collected clearly shows a distinct seasonal response to nutrient input. The proposed nutrient TMDL ignores the fact that dissolved nutrients will pass through San Diego Creek and Newport Bay during the wintertime when there is little or no macroalgae nutrient uptake. Imposition of wintertime nutrient TMDLs are inconsistent with the guidance offered by US EPA, and should be deleted from the proposed nutrient TMDL rulemaking.*

Response 3.1 As described in the nutrient TMDL and supporting documentation, seasonal variation is explicitly considered (see sections 3.5 and 3.6). Comments provided (Fong, 1998; Josselyn, 1998; Natural Heritage Institute, 1998) support the scientific basis for the need to control wintertime discharges of nutrients. Photographic evidence provided (Natural Heritage Institute, 1998) demonstrates that there were significant macroalgae blooms in upper Newport Bay from October-December 1994. Josselyn (1998) and Fong (1998) point out that even in the absence of macroalgae blooms, nutrients can be taken up by phytoplankton, which decay and then later become a source of nutrients. These two factors: 1) the demonstrated presence of significant macroalgae well after the presumed "growing" season; and 2) the bioavailability of winter time discharges for plant uptake later in the year, require the control of wintertime discharges. EPA, therefore, believes that nutrient TMDLs for Newport Bay that did not include limits on winter time discharges would be inconsistent with Federal statutory and regulatory requirements.

Comment 3.2 *It is agreed by all that inorganic nitrogen is the nutrient available for algal growth during those periods of the year when macroalgae are present. Inclusion of organic nitrogen in the nutrient TMDL rulemaking will require significant reduction in nitrogen species which are unavailable, and thereby serve no useful purpose in controlling algal growth. Therefore, the nutrient TMDL and Margin of Safety should be based on inorganic nitrogen, which includes those species of nitrogen readily available to macroalgae.*

Response 3.2 Although inorganic forms of nitrogen may be the most readily available to support algal growth, organic forms of nitrogen can be converted to inorganic forms, therefore, it is

critical to control all forms of nitrogen. Both Josselyn (1998) and Fong (1998) makes this point and discuss the need to control all forms of nitrogen discharged to Newport Bay. EPA recognizes that Horne (1998) has suggested that only inorganic forms of nitrogen need to be controlled. However, EPA believes it is critical to control all forms of nitrogen.

Comment 3.3 *IRWD agrees that during the wintertime, San Diego Creek flows greater than 50 cfs, as measured at Campus Drive, represent storm induced flows, and should not be regulated.*

Response 3.3 EPA notes this supporting comment.

Comment 3.4 *IRWD disagrees with basing a scientifically derived nutrient TMDL on the current Basin Plan limitation of 13 mg/l TIN in San Diego Creek, Reach 1. The USEPA analysis of the Basin Plan derivation of this limitation is vague and unsupported in the supporting documentation.*

Response 3.4 The 13 mg/l TIN objective in San Diego Creek, Reach 1 was legally established as a state water quality objective by the Regional Board and is currently being exceeded. Under the terms of the consent decree (*Defend the Bay v. Marcus*, No. C-97-3997), EPA must establish nutrient TMDLs for both San Diego Creek and Newport Bay. The brief discussion of the derivation of the 13 mg/l TIN objective was taken from the Regional Board's August 27, 1997 staff report and was meant to provide background information only. For the purpose of establishing a TMDL, neither the State nor EPA is under an obligation to provide supporting documentation for a water quality standard that has already been established.

Comment 3.5 *IRWD agrees with the USEPA that phosphorous limitations are best controlled through the sediment TMDL rulemaking process.*

Response 3.5 EPA notes this supporting comment.

Comment 3.6 *The nutrient TMDL identifies Newport Bay is impacted by low dissolved oxygen during the summer months, when low tides occur at night. The nutrient TMDL attributes low dissolved oxygen to algal respiration, and the magnitude of algal respiration would be reduced by reducing the mass of macroalgae. Reduction in algal biomass will concurrently serve to reduce aesthetic impacts associated with macroalgae.*

Response 3.6 EPA notes this supporting comment.

Comment 3.7 *The USEPA does not discuss water quality improvements associated with Newport Bay dredging. The nutrient TMDL should include the benefits of dredging as a control mechanism to improving water quality, and reducing the growth stimulating potential of nutrient input.*

Response 3.7 In section 3.5 of EPA's TMDL report, EPA discusses the potential benefits of

increased tidal flushing that would occur as a result of maintaining the sedimentation basins in Newport Bay at a greater depth. Increased tidal flushing is considered a part of the margin of safety, since the potential benefits have not been well quantified. It should be noted that the act of dredging may lead to water quality degradation over the short term, since nutrients from the sediment would be released, but the greater volume of tidal exchange that would result after dredging would likely dilute freshwater nutrient inputs.

Comment 3.8 *(Under Recommendations) Since algal growth occurs during the summertime, the nutrient TMDL should apply only to the long, warm, dry summer period. Therefore, the nutrient TMDL should apply from April through November, and not applied from December through March.*

Response 3.8 See responses to comments 3.1 and 3.2.

Comment 3.9 *The nutrient TMDL should apply to all discharges from the watershed into Newport Bay.*

Response 3.9 The nutrient TMDL does apply to all discharges into Newport Bay (see Section 2, Table 1).

Comment 3.10 *The nutrient TMDL should be based on an objective established for Newport Bay, since the only identified impacts occur in the bay. Scientifically determined nutrient TMDLs established for Newport Bay will improve water quality in the bay, while a nutrient TMDL based on San Diego Creek will not improve the creek (not listed), and may not improve Newport Bay.*

Response 3.10 The total nitrogen and total phosphorous TMDLs for Newport Bay are based on both the algae and dissolved oxygen narrative objectives established for Newport Bay. The TMDLs were established to decrease loading below levels which correlated to extensive presence of macrophytes. San Diego Creek is listed as impaired due to nutrients. The total nitrogen TMDL for Newport Bay should result in attainment of the 13 mg/l TIN standard in San Diego Creek, Reach 1. A separate TMDL is necessary to ensure attainment of the 5 mg/l TIN standard in San Diego Creek, Reach 2. It should be noted that exceedances of the numeric TIN standards have been observed in San Diego Creek. Collection of data in San Diego Creek which might indicate other impacts due to nutrient enrichment is not currently occurring. EPA will recommend that the Regional Board expand data collection in San Diego Creek as part of its Regional Monitoring Program.

Comment 3.11 *The nutrient TMDL proposed by the USEPA must include a phasing program. The USEPA must allow corrective amendments to the Basin Plan which will clearly identify beneficial use impacts and implementation of control mechanisms which will reduce beneficial use impacts in Newport Bay.*

Response 3.11 Neither the Clean Water Act nor the implementing regulations requires the EPA to include a phasing program when it establishes a TMDL. The EPA does support the Regional Board's proposed phased approach to addressing nutrient issues in San Diego Creek and Newport Bay and will clearly allow for future amendments to the Basin Plan that meet Federal statutory and regulatory requirements.

***Comment 3.12** The benefits associated with dredging Upper Newport Bay must be included as a control mechanism to meet the nutrient TMDL.*

Response 3.12 See response to comment 3.7.

Commenter 4: David Dilks, Limno-Tech, Inc., Memorandum dated March 31, 1998

***Comment 4.1** My primary review comment relates to use of 50 cubic feet per second (cfs) flow value for San Diego Creek to serve as a cutoff above which loads need not be controlled. The 50 cfs value has been justified in terms of protection of San Diego Creek, but no justification has been provided for whether flows above this value are quickly transported out of the Bay. If the desire of the TMDL is to protect Newport Bay from excess total nitrogen loads throughout the year, then use of a scientifically justified flow cut-off value is essential.*

Response 4.1 See section 3.7 for a discussion of critical flow conditions and the justification for the use of the 50 cfs storm flow definition. It should be noted that EPA is not asserting that flows from San Diego Creek above 50 cfs are quickly transported out of the Bay, but that discharges of total nitrogen below 50 cfs are the most critical to control, since low flow discharges of total nitrogen likely have the greatest impact on macrophyte growth in upper Newport Bay.

***Comment 4.2** Table 3 lists the total phosphorous TMDL for Newport Bay, and appropriately states that it is "expressed as allowable discharge to Newport Bay". Statements were made at TMDL workgroup meetings that one means to help achieve the TMDL was via dredging of in-Bay sediments. It is therefore important to emphasize that the 50% loading reduction desired for the TMDL apply to phosphorous load that is delivered to the Bay.*

Response 4.2 The EPA agrees that dredging of in-Bay sediments is not an appropriate means to achieve the total phosphorous TMDL. The total phosphorous TMDL clearly limits discharge of total phosphorous to Newport Bay and does not allow for removal of the total phosphorous load from the Bay as a means to achieve the TMDL, waste load allocations, and load allocations.

***Comment 4.3** Section 3.1.3 states that TIN concentrations at the Upper Newport Bay monitoring station UNBSDC observed in 1996-1997 are between 2.5 to 5 mg/l. Our analysis of the IRWD monitoring data for this period shows that TIN concentrations average approximately 0.7 mgN/l at this station. The nature of this discrepancy should be addressed.*

Response 4.3 The description of the TIN concentrations in Upper Newport Bay were taken from the Regional Board's August 27, 1997 staff report. The EPA did not independently review the data set and does not have an explanation for the discrepancy. It should be noted that the information presented was not used as the basis for deriving the total nitrogen TMDL for Newport Bay, so any resolution of any discrepancy would not materially change the TMDL established by EPA.

Comment 4.4 *The method used to estimate existing nutrient loading rates to Newport Bay should be explicitly described, because the TMDLs are based upon these calculations and because alternative methods for estimating loads from a sparse dataset will produce a wide range of loading estimates. Documentation of the method used to calculate existing loads is also important to ensure that a consistent methodology be used when calculating future loads to the Bay to determine whether the TMDL is being achieved.*

Response 4.4 EPA relied on the Regional Board's calculations of existing loads. Data from 1990-1997 was used. The Regional Board calculated mean concentration and daily flow rates for January-March, April-June, July-September, and October-December for both storm events and non-storm events. The mean daily load for each quarter and for storm and non-storm events was calculated by multiplying the mean concentration times the mean daily flow. The mean daily load for "storm" days was multiplied by the average number of storm days in the quarter to determine the average "storm" loading for that quarter. A similar method was applied to non-storm conditions. Storm loading was added to non-storm loading to determine total loading for the quarter.

Commenter 5: Mark R. Wolfe, Natural Heritage Institute, letter dated March 31, 1998

Comment 5.1 *San Diego Creek Flow Cutoff for Application of Wet-season Reduction Targets ... by all accounts the flow level in the Creek at which salinity stratification does occur in the Bay is almost certainly several factors greater than 50 cfs. Subject to any comments later forwarded to EPA by Limno-Tech, we therefore recommend that at a minimum the nutrient TMDL's wet-season nutrient reduction targets apply at all times during which flows in San Diego Creek equal 400 cfs or less.*

Response 5.1 See response to comment 4.1.

Comment 5.2 *Assertion of Uncertainty Regarding the Need to Control Wet-Season Nutrient Inputs to Newport Bay. ... we must object to any suggestion, assertion, or reference in the TMDL to the notion that wet-season nutrient discharges do not contribute to algal growth and beneficial use impairment in Newport Bay, and that they therefore may not need to be controlled. Such assertions, references or citations should likewise not be cited as evidence that EPA has taken a "conservative approach" in establishing the TMDL.*

Response 5.2 EPA agrees that it is important to control wet-season discharges of nutrients and

in its proposed and final nutrient TMDLs for Newport Bay specifically includes limits that apply during all seasons. EPA has modified the supporting documentation of the TMDL to more clearly identify those portions of the record that support year round control of nutrient inputs (including Dr. Jack Skinner's photo documentation and the review letters from Drs. Fong and Josselyn), as well as identifying those portions of the record that support more limited seasonal control of nutrient inputs (specifically the research of Dr. Horne). Since the record before EPA does include disagreement on the need for wet-season controls, it is appropriate to characterize EPA's inclusion of wet-season limits as part of the margin of safety.

Commenter 6: Chris Crompton, Manager, Environmental Resources, County of Orange, letter dated March 31, 1998

Comment 6.1 Page 2 - *The year of the consent decree appears to be wrong, or would otherwise represent an unrealistic schedule.*

Response 6.1 The consent decree approval date is correct. The completion schedule reflected EPA's understanding that the RWQCB was already working on the sediment and nutrient TMDLs and had scheduled their completion in 1997.

Comment 6.2 Table 3, Page 5, Page 18-19 - *The control of total phosphorous is already addressed in the sediment TMDL. On page 19 (it) is stated that effective erosion and sedimentation controls would control phosphorous loading. Load allocations should therefore not be included in the nutrient TMDL.*

Response 6.2 EPA agrees that implementation of sedimentation and erosion controls should also control phosphorous loadings. Section 3.4 of the TMDL report describes the requirements of a TMDL, which include waste load allocations and load allocations. The sediment TMDL includes waste load allocations and load allocations for sediment, but does not include waste load and load allocations for phosphorous. EPA recognizes the relationship between sediment and phosphorous discharges and is allocating the phosphorous loads in the same manner as the sediment loads are allocated (i.e. using the same discharger sectors and the same proportional allocation of loads).

Comment 6.3 Page 11 - *The fish kill in the Newport Island area may have been the result of a red tide rather than the die off of an nutrient induced algae bloom.*

Response 6.3 The passage referenced is from the Santa Ana Regional Water Quality Control Board's August 27, 1997 staff report. EPA is relying on the Regional Board's professional judgement, as reflected in that report, as to the cause or potential cause of the fish kill. It should be noted that the information presented was not used as the basis for deriving the total nitrogen TMDL for Newport Bay, so any resolution of any discrepancy between the Regional Board's representation of the cause of the fish kill and Orange County's explanation would not materially

change the TMDL established by EPA.

Comment 6.4 *Page 12 - The availability of phosphate data is not limited. In the County's NPDES monitoring program, the suite of constituents analyzed include nitrate, ammonia, TKN, and total phosphate.*

Response 6.4 The referenced passage has been modified to indicate that less phosphorous data is available than nitrogen data for the watershed.

Comment 6.5 *Page 12-13 - One contentious point ... is the establishment of a year-round TMDL, albeit only for low flow discharges. This application of the "Margin of Safety" requirement may result in millions of dollars in expenditures for nutrient controls that may be of little value. The arbitrary assignment of 50 cfs as the upper limit of applicability will create problems in implementation of some control methods. The attached data from the stream gage on San Diego Creek at Campus Drive shows that the peak discharges were very high on some of the days for which the recorded average was less than or equal to 50 cfs. Examining Figure 2, it appears that the upper limit of applicable discharge for Reach 2 could be reduced substantially from 25 cfs and still maintain an adequate margin of safety.*

Response 6.5 See responses to comments 3.1 and 3.2. Also see revised discussion in sections 3.5-3.7 of the TMDL report. As discussed in the TMDL report in section 3.1.3, the 50 cfs limit was not arbitrary, but based on an evaluation of the mean daily flow rate versus the observed total inorganic nitrogen (TIN) values. The data show that the applicable numeric objective (13 mg/l TIN) is frequently exceeded at flow rates below 50 cfs, but is not generally exceeded at mean daily flow rates above 50 cfs. EPA also disagrees with the assertion that the upper limit applicable to Reach 2 could be substantially reduced. An examination of Figure 2 shows that out of the seven TIN data points at flow rates above 25 cfs, one is at approximately 15 mg/l and another is close to 5 mg/l (5 mg/l TIN is the applicable standard). Therefore, a further decrease in the upper limit for San Diego Creek, Reach 2 would increase the likelihood of violations of the applicable water quality standard.

Comment 6.6 *Page 13 - The report cites the RWQCB's intended goal to reduce nitrate load to that of the early 1970's. [Issues related to the gaging station location and the extended drought are discussed]. The net effect of this information is that there is no clear rationale for establishing 1973 as the TMDL basis. The low nutrient loads in that year are best explained as a data aberration.*

Response 6.6 The EPA concurs with the Regional Board's response to the identical comment made by Orange County in their January 8, 1998 letter to the Regional Board. Additionally, the data upon which the nutrient TMDL is based is the best information available to EPA at this time. EPA strongly endorses the Regional Board's approach to periodically review the TMDL and conduct additional monitoring and studies, which could lead to refinement of the nutrient TMDL for Newport Bay and San Diego Creek.

Comment 6.7 *Page 15 - With respect to assigning load allocations to the countywide urban stormwater permit, the Maximum Extent Practicable standard established by Section 402(P)(3)(b) of the Clean Water Act should be recognized.*

Response 6.7 NPDES permits, including NPDES stormwater permits, must include effluent limits consistent with the assumptions and requirements of approved wasteload allocations (40 CFR 122.44(d)(1)(vii)). Development of effluent limits for individual stormwater permits will be determined at the time of permit issuance by the permitting authority.

Comment 6.8 *Page 16 - The research of Dr. Alex Horne has shown that the storage of nutrients in plant biomass during the winter season is minimal.*

Response 6.8 EPA recognizes that Dr. Horne's studies of macrophytes in Newport Bay have indicated limited presence of macrophytes during the winter time and that presumably storage of nutrients in macrophytes would be limited. It should also be noted that Drs. Fong and Josselyn (see responses to IRWD's comments 1 and 2) have discussed nutrient uptake by phytoplankton in the winter time and that there is photo documentation of macrophyte presence as late as December 1994. The photo evidence of macrophyte presence in the winter time would presumably also indicate nutrient uptake and storage by macrophytes. The studies conducted by Dr. Horne and his associates help to enhance the understanding of nutrient cycling in Newport Bay, and an expansion of those efforts would provide a clearer picture of the year round dynamics of aquatic plant growth in Newport Bay.

Comment 6.9 *Page 16 - Using values from literature that were derived from studies in areas across the country may generate allocations that are inequitable. It is recommended that a phased approach be used in the implementation of the TMDL. The true contributions of each stakeholder should first be determined through the RWQCB's proposed regional monitoring program. With the results of the monitoring, more valid allocations can be assigned.*

Response 6.9 EPA agrees that the phased approach proposed by the Regional Board and the establishment of a regional monitoring program could lead to refinement of the allocations. EPA strongly supports the Regional Board in these efforts. EPA does not believe that Federal statute or regulation requires determination of the "true" contributions of stakeholders prior to implementation of the TMDL. 40 CFR Section 130.2(g) specifically states that "Load allocations are best estimates of the loading...". EPA believes that the approach Tetra Tech took to assess historical loading is well supported and that the allocations are equitable and are based on the best available information.

Comment 6.10 *General Comment - With respect to implementation and compliance, there is no time frame specified in the EPA document. The proposed goal is a 50% reduction in the load to the bay. Without a schedule of implementation, immediate violations would occur after adoption.*

Response 6.10 Implementation time frames are an issue which can be addressed in the State implementation measures for the TMDL. EPA is not required to establish a specific implementation time frame requirement as part of the TMDLs.

Commenter 7: Ernesto Munoz, Assistant City Engineer, City of Costa Mesa, letter dated March 31, 1998

***Comment 7.1** The City, in concurrence with the County of Orange, requests an extension of a minimum of 30 days be granted to allow for adequate review.*

Response 7.1 The EPA was not able to grant the City of Costa Mesa's requested extension. The letter from the EPA dated April 2, 1998 provides a complete response to the City's request.

Commenter 8: Robert J. Caustin, Director, Defend the Bay, letter dated March 31, 1998

***Comment 8.1** ...the desire for clarification (is) that if sediment gets into the creek or bay, it is considered loading at that point. This is especially important when considering the nutrient factor in sediment. If unwanted excess nutrients, attached to sediment, sit in the bay until the next dredging, they are bioavailable to stimulate algae growth. Subsequent dredging cannot be considered an equivalent to actual reductions in loading.*

Response 8.1 See response to comment 4.2.